CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/CEMENT/2014-15 Date: 20.12.2014

TEST REPORT ON CEMENT

* CUSTOMER	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
*AGENCY	:	**Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.
*NAME OF THE WORK	:	Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.
*REFERENCE	:	EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	18.12.2014
PERIOD OF TESTING	:	18.12.2014 to 20.12.2014

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	180 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	475 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

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VIDYARANI P.K.
Technical Manager

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/SAND-Gradation/2016-17 : 20.12.2014

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

*** Name of Work** : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 18.12.2014

Date of Testing : 20.12.2014

Total Wt. of Aggregates in gms **1000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	97.00	90-100	90-100	90-100	95-100
2.36	77.20	60-95	75-100	85-100	95-100
1.18	54.70	30-70	55-90	75-100	90-100
600 Micron	24.90	15-34	35-59	60-79	80-100
300 Micron	11.90	5-20	8-30	12-40	15-50
150 Micron	6.30	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/AGG/GR/2016-17 : 20.12.2014

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

*** Name of Work** : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm)

Sample Received on : 18.12.2014

Date of Testing : 20.12.2014

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.30	95-100	85-100
20	35.90	30-70	0-20
10	15.86	10-35	0-5
4.75	3.16	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/AGG/GR/2016-17 : 20.12.2014

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

*** Name of Work** : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (20mm)

Sample Received on : 18.12.2014

Date of Testing : 20.12.2014

Total Wt. of Aggregates in gms= **5000**

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS :383-1970 (RA- 2007)	
		Graded	Single Sized
40	100	100	100
20	97.28	95-100	85-100
10	31.28	25-55	0-20
4.75	6.28	0-10	0-5

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/CC Solid Block/2014-15 : 25.12.2014

TEST REPORT ON SOLID CONCRETE BLOCKS

* Customer : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

* Agency : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

* Name of the Work : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

Sample Received on : 20.12.2014

Date of Testing : 25.12.2014

Size of Blocks : 400mm x 200mm x 200mm

Cross Sectional Area : 80000 mm^2

Technical Reference : IS: 2185 (Part 1) - 2005

No. of Blocks Tested : 08

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	35.26	259.9	3.25	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	34.29	261.8	3.27	
3	Block 3	35.28	263.3	3.29	
4	Block 4	36.34	262.5	3.28	
5	Block 5	34.28	260.8	3.26	
6	Block 6	35.26	258.5	3.23	
7	Block 7	35.36	259.3	3.24	
8	Block 8	34.28	260.5	3.26	

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/CUBE/2014-15 13.02.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

*** Name of the work** : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 13.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	16.01.2015	13.02.2015	8.187	360.6	16.03
2	16.01.2015	13.02.2015	8.226	365.3	16.24
3	16.01.2015	13.02.2015	8.342	389.6	17.32

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/CUBE/2014-15 13.02.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

*** Name of the work** : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 13.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	16.01.2015	13.02.2015	8.139	375.5	16.69
2	16.01.2015	13.02.2015	8.265	382.6	17.00
3	16.01.2015	13.02.2015	8.315	390.5	17.36

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/CUBE/2014-15 14.02.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

*** Name of the work** : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 14.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.01.2015	14.02.2015	8.130	365.8	16.26
2	17.01.2015	14.02.2015	8.229	362.3	16.10
3	17.01.2015	14.02.2015	8.307	390.4	17.35

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*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 14.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	17.01.2015	14.02.2015	8.123	362.5	16.11
2	17.01.2015	14.02.2015	8.265	372.3	16.55
3	17.01.2015	14.02.2015	8.330	396.3	17.61

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

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*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 16.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.01.2015	16.02.2015	8.155	365.3	16.24
2	19.01.2015	16.02.2015	8.226	372.4	16.55
3	19.01.2015	16.02.2015	8.380	389.5	17.31

* Information is furnished by the Customer/Representative

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Technical Manager

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T-2377

Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/CUBE/2014-15 16.02.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

*** Agency** : **Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.

*** Name of the work** : Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.

*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 16.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	19.01.2015	16.02.2015	8.150	365.6	16.25
2	19.01.2015	16.02.2015	8.260	375.9	16.71
3	19.01.2015	16.02.2015	8.382	394.7	17.54

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

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*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 18.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	21.01.2015	18.02.2015	8.150	379.5	16.87
2	21.01.2015	18.02.2015	8.226	389.3	17.30
3	21.01.2015	18.02.2015	8.307	390.2	17.34

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/CUBE/2014-15 18.02.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*** Customer** : **Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.

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*** Reference** : EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014

*** Sample ID** : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*** Grade of Concrete** : M_{15}

Compressive Strength as on : 28th day

Sample Received on : 18.02.2015

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	21.01.2015	18.02.2015	8.228	360.8	16.04
2	21.01.2015	18.02.2015	8.339	382.3	16.99
3	21.01.2015	18.02.2015	8.417	398.6	17.72

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/Pre Cast Slab/2014-15 27.01.2015

TEST REPORT ON CONCRETE CORE (PRE CAST SLAB)

* Name of Customer	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Name of Agency	:	**Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.
* Name of work	:	Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.
Reference	:	EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014
Techinical Reference	:	IS:516-1959 (Reaffirmed 2008), SP-24:1983.
Sample ID	:	Pre cast slab
Sample Received on	:	22.01.2015
Date of Testing	:	27.01.2015

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	79.00	0.390	2514.25	1.58	0.957	33.60	17.11	18.48	17.69	22.11
2	50.00	80.00	0.399	2540.11	1.60	0.958	33.90	17.27	18.65	17.86	22.33
3	50.00	82.00	0.403	2503.00	1.64	0.960	34.25	17.44	18.84	18.09	22.61

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.05/KRIDL/CSR-12/709d/Pre Cast Slab/2014-15 29.01.2015

TEST REPORT ON CONCRETE CORE (PRE CAST SLAB)

* Name of Customer	:	**Asst. Executive Engineer,** Byatarayanapura Sub Division, BBMP, Bangalore.
* Name of Agency	:	**Executive Engineer - 4,** KRIDL, BBMP Division, Bangalore – 560 010.
* Name of work	:	Construction of RCC drains at Agrahara Layout in Ward No.05, Byatarayanapura Sub Division, BBMP, Bangalore.
Reference	:	EE/BTP/KRIDL/W.O/93/2014-15 Dated: 05.09.2014
Techinical Reference	:	IS:516-1959 (Reaffirmed 2008), SP-24:1983.
Sample ID	:	Pre cast slab
Sample Received on	:	22.01.2015
Date of Testing	:	29.01.2015

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	80.00	0.393	2501.92	1.60	0.958	32.50	16.55	17.88	17.13	21.41
2	50.00	81.00	0.403	2533.90	1.62	0.959	33.10	16.86	18.21	17.46	21.82
3	50.00	84.00	0.415	2516.16	1.68	0.961	34.25	17.44	18.84	18.10	22.63

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